

What is claimed is:

1. A low noise amplifier for a multi-band receiver, comprising:
  - a positive signal amplifier having a first input for receiving a positive RF signal, and a first output for providing an amplified positive RF signal;
  - a negative signal amplifier having a second input for receiving a negative RF signal, and a second output for providing an amplified negative RF signal; and
  - a tunable differential filter having a tuning control input, a third input for said first output and a fourth input for said second output;

the frequency response of said tunable differential filter varying with a control signal input to said tuning control input, whereby signal of undesired frequencies may be filtered from said first output and said second output.
2. The low noise amplifier of claim 1, wherein said tunable differential filter includes a centre-tapped inductor.
3. The low noise amplifier of claim 1, wherein said tunable differential filter comprises a capacitor/inductor filter.
4. The low noise amplifier of claim 1, wherein said positive and negative signal amplifiers include source degeneracy.
5. The low noise amplifier of claim 1, further comprising a sleep circuit.
6. The low noise amplifier of claim 1, further comprising RF blocking transistors.
7. The low noise amplifier of claim 1, wherein said positive and negative signal amplifiers comprise single amplification stages comprising a single transistor.
8. The low noise amplifier of claim 1, wherein said tunable differential filter comprises two or more capacitor/inductor filters, switched in and out of said circuit using transistors.
9. The low noise amplifier of claim 1, wherein said tunable differential filter comprises:

two or more pairs of capacitors, each pair of capacitors being arranged in series, one end of said series connected to said third input and the other end of said series connected to said fourth input; and

a signal centre-tapped inductor, the centre tap connect to supply voltage potential, one end of said inductor connected to said third input and the other end of said conductor connected to said fourth input.

9. The low noise amplifier of claim 8, wherein said tunable differential filter comprises a transistor in series with each of said two or more pairs of capacitors, each transistor being positioned between its associated pair of capacitors, whereby each the circuit for each pair of capacitors can be opened or closed.

10. The low noise amplifier of claim 1 wherein each of said amplifiers comprises a transistor.

11. The low noise amplifier of claim 1 wherein each of said amplifiers comprises a field effect transistor (FET).

12. The low noise amplifier of claim 1 wherein said tunable differential filter is tuned for a transmit band of a cellular communication system.

13. The low noise amplifier of claim 1 wherein a separate amplifier is used for each band and/or standard, whereby each separate amplifier may be optimised for the particular band and/or standard that it is to amplify.

14. The low noise amplifier of claim 1, further including decoupling capacitors to reduce second order distortion.

15. The low noise amplifier of claim 1 wherein said low noise amplifier is fully integrated.